FluWatch

Public Health Agency of Canada | Agence de la santé publique du Canada

November 20 to November 26, 2011 (Week 47)

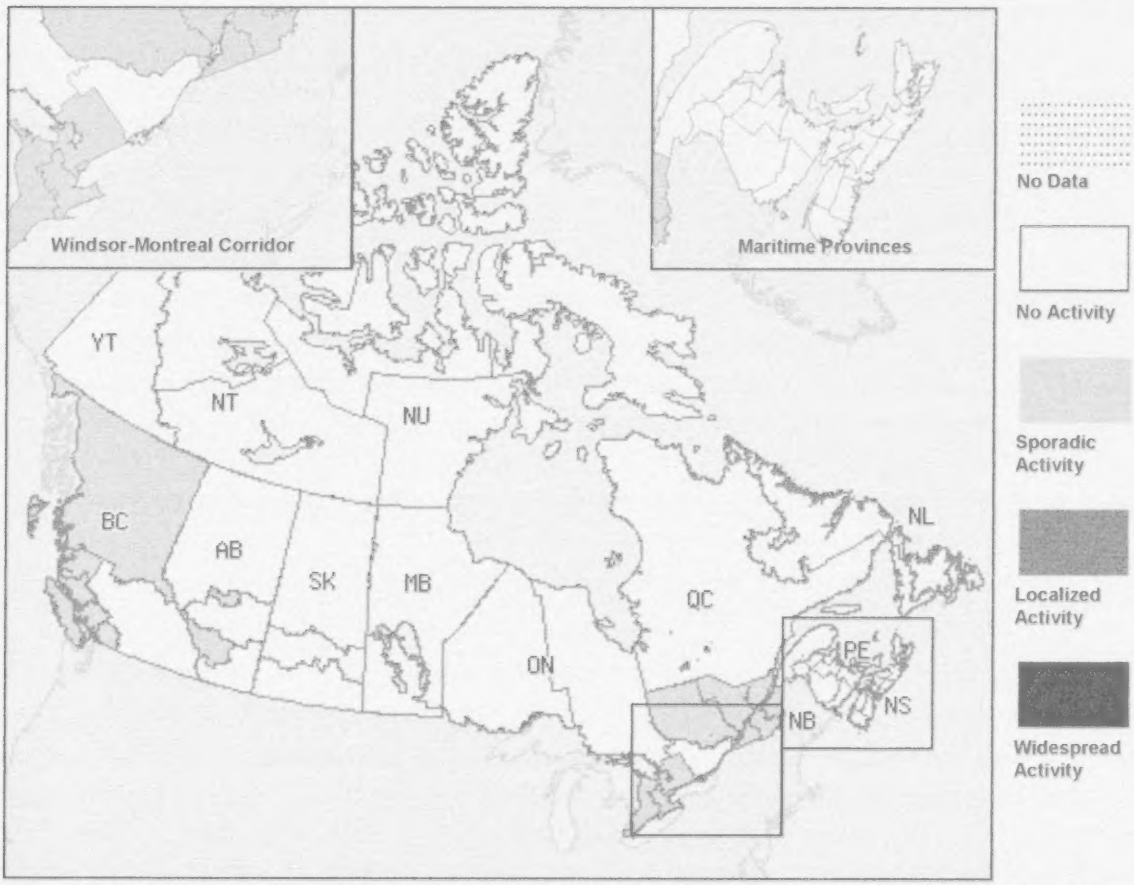
Overall Influenza Summary

- Influenza activity in Canada is starting to increase in some regions, but remains low overall
- 14 regions (within BC, AB ON & QC) reported sporadic influenza activity
- In week 47, 20 laboratory detections of influenza were reported (11 A/H3, 1 A/H1, 5 A unsubtyped and 3 B)
- Two adult influenza hospitalizations were reported from AB & ON
- The national ILI consultation rate remains low

Influenza Activity (geographic spread) and Outbreaks

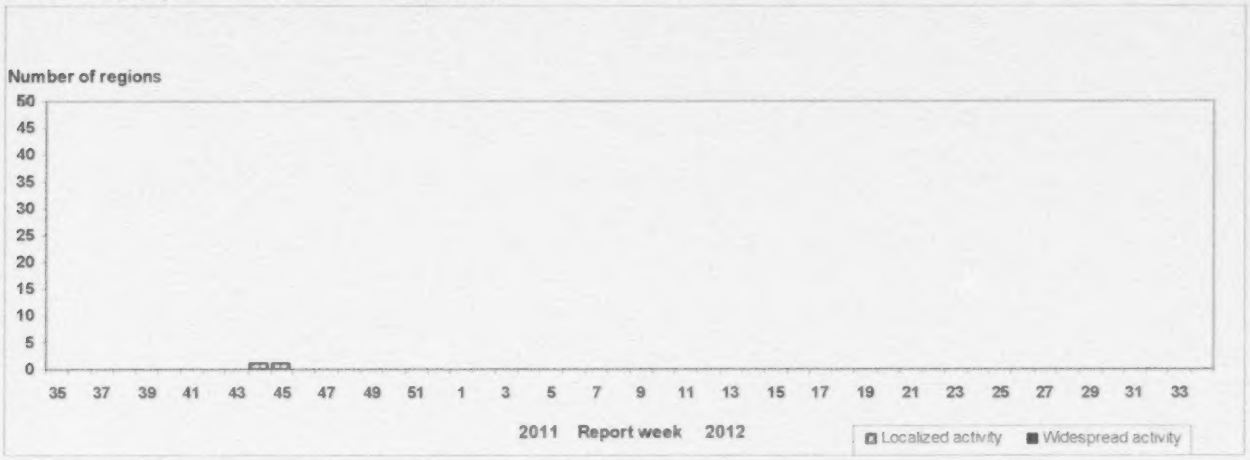
In week 47, 14 surveillance regions within BC, AB, ON and QC reported sporadic influenza activity (see Figure 1). No outbreaks of influenza or ILI were reported this week (Figure 3).

Figure 1. Map of overall Influenza activity level by province and territory, Canada, Week 47



Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and reported outbreaks. Please refer to detailed definitions on the last page. For areas where no data is reported, late reports from these provinces and territories will appear on the FluWatch website.

Figure 2. Number of influenza surveillance regions† reporting widespread or localized influenza activity, Canada, by report week, 2011-2012 (N=56)



† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

Figure 3. Overall number of influenza outbreaks, Canada, by report week, 2011-2012

Influenza and Other Respiratory Virus Detections

In week 47, 2,107 influenza tests were conducted of which 20 (0.9%) were positive for influenza. The proportion of tests positive for influenza has remained below 1.0% since the beginning of this season (Table 1 and Figure 4).

The proportion of influenza virus detections by type/subtype this season to date is as follows: 81.6% influenza A (66% - A(H3); 6% - A(H1N1)pdm09; 27% - unsubtyped) and 18.4% influenza B (Table 1).

Detailed information on age and subtype were received on 48 cases this season to date (Table 2). The proportions of cases by age group are as follows: 22.9% were < 5 years; 6.3% were between 5-19 years; 29.2% were between 20-44 years; 12.5% were between 45-64 years of age; and 29.2% were >= 65 years.

In week 47, the proportion of tests positive for rhinoviruses (12.5%) and hMPV (2.7%) continued to decline. The proportion of positive tests for the other respiratory viruses continued to increase, however the proportions remain low (RSV-4.7%; parainfluenza-7.1%; adenovirus-5.1%; coronavirus-1.4%) (Figure 5). For more details, see the weekly Respiratory Virus Detections in Canada report.

Table 1. Weekly & Cumulative numbers of positive influenza specimens by Provincial Laboratories, Canada, 2011-2012

Reporting provinces	November 13 to November 19, 2011)						Cumulative (August 28, 2011 to November 19, 2011)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	5	0	5	0	0	0	23	0	23	0	0	2
AB	3	0	3	0	0	2	14	0	12	1	1	3
SK	0	0	0	0	0	0	0	0	0	0	0	0
MB	0	0	0	0	0	0	0	0	0	0	0	0
ON	6	0	3	1	2	0	9	0	6	1	2	1
QC	3	0	0	0	3	1	16	0	0	2	14	8
NB	0	0	0	0	0	0	0	0	0	0	0	0
NS	0	0	0	0	0	0	0	0	0	0	0	0
PE	0	0	0	0	0	0	0	0	0	0	0	0
NL	0	0	0	0	0	0	0	0	0	0	0	0
Canada	**17**	**0**	**11**	**1**	**5**	**3**	**62**	**0**	**41**	**4**	**17**	**14**

*Unsubtyped: The specimen was typed as influenza A, but no test for subtyping was performed. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Weekly data is based on week of positive lab detection. Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add up to cumulative totals.

Table 2. Weekly & Cumulative numbers of positive influenza specimens by age groups reported through case-based laboratory reporting, Canada, 2011-2012*

Age groups	Weekly (Nov. 20 to Nov. 26, 2011)					Cumulative (Aug. 28, 2011 to Nov. 26, 2011)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total
<5	2	0	1	1	0	8	1	4	3	3
5-19	0	0	0	0	0	3	0	3	0	0
20-44	2	0	1	1	2	10	2	3	5	4
45-64	0	0	0	0	0	4	0	1	3	2
65+	5	1	3	1	1	11	1	6	4	3
Unknown	0	0	0	0	0	0	0	0	0	0
Total	9	1	5	3	3	36	4	17	15	12

*Please note that this table reflects the number of specimens for which demographic information was reported. These represent a subset of all positive influenza cases reported. Delays in the reporting of data may cause data to change retrospectively.

Figure 4. Influenza tests reported and percentage of tests positive, Canada, by report week, 2011-2012

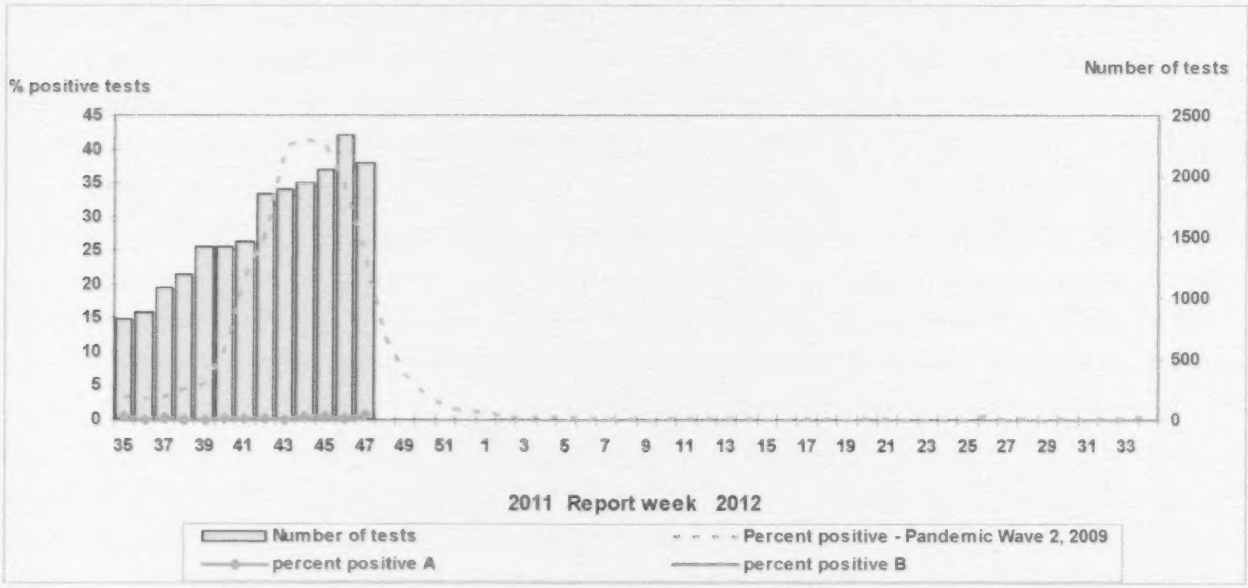
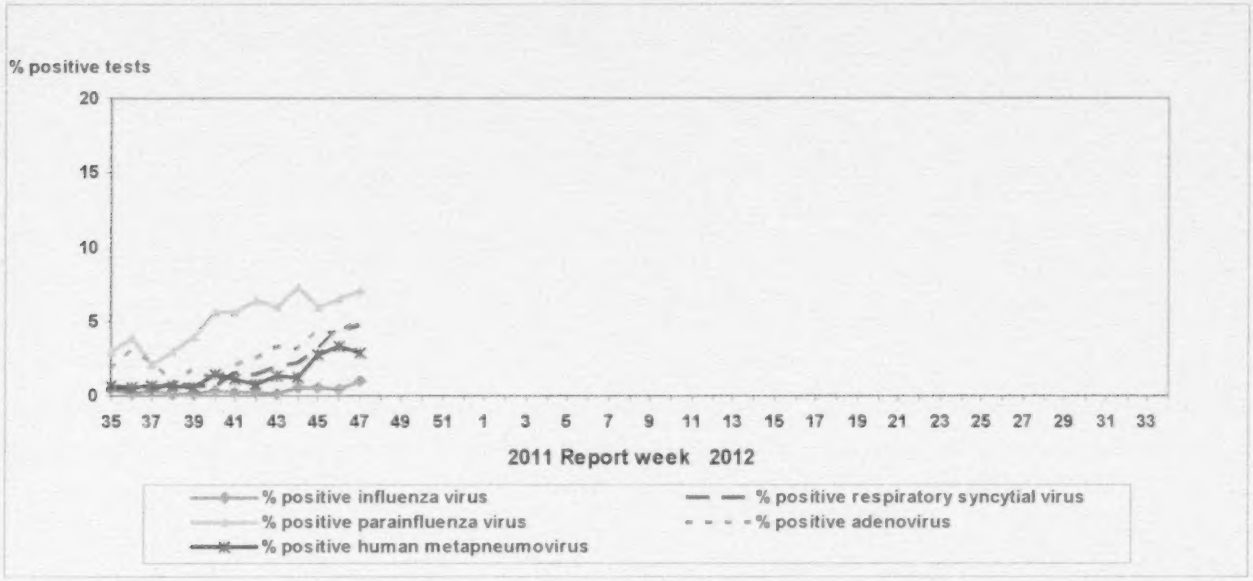


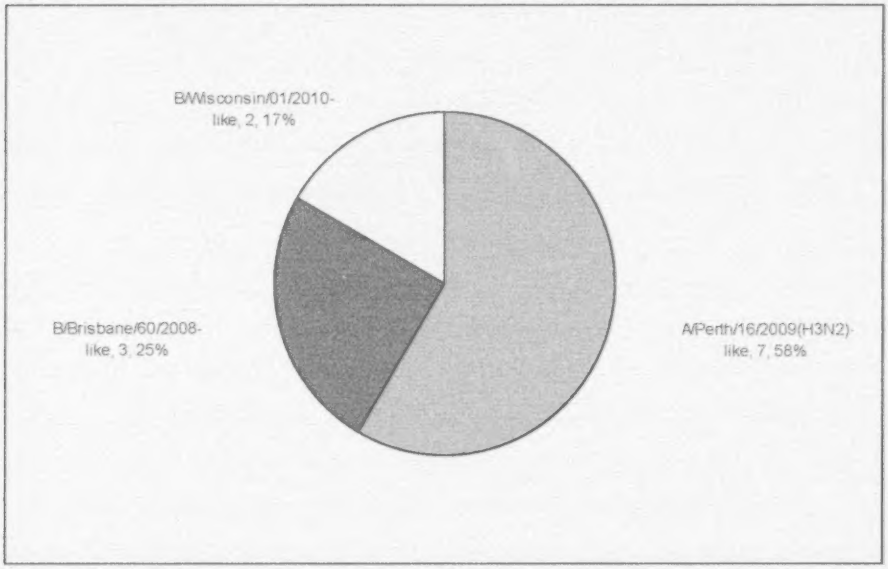
Figure 5. Percent positive influenza tests, compared to other respiratory viruses, Canada, by reporting week, 2011-2012


% positive tests
20
15
10
5
0
35 37 39 41 43 45 47 49 51 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33
2011 Report week 2012
% positive influenza virus
% positive parainfluenza virus
% positive human metapneumovirus
% positive respiratory syncytial virus
% positive adenovirus

Influenza Strain Characterizations

No new influenza strain characterizations were reported in week 47. Since the start of the season, the National Microbiology Laboratory (NML) has antigenically characterized 12 influenza viruses (seven A/H3N2 and five B). All seven A/H3N2 viruses (from BC, AB & ON) are antigenically related to A/Perth/16/2009. Three of the influenza B viruses characterized (from AB & QC) are antigenically related to the vaccine strain B/Brisbane/60/2008 (Victoria lineage). The other two influenza B viruses (from BC) are antigenically related to the reference virus B/Wisconsin/01/2010-like, which belongs to the Yamagata lineage. (Figure 6)

Figure 6. Influenza strain characterizations, Canada, 2011-2012, N = 12



Note: The recommended components for the 2011-2012 Northern Hemisphere influenza vaccine include: A/Perth/16/2009 (H3N2), A/California/7/2009 (H1N1) and B/Brisbane/60/2008.

Antiviral Resistance

Since the beginning of the season, NML has tested 12 influenza viruses (seven A/H3N2 and five B) for resistance to oseltamivir (by phenotypic assay and/or sequencing) and for resistance to zanamivir (by phenotypic assay) and it was found that all 12 viruses were susceptible to oseltamivir and zanamivir. Seven A/H3N2 viruses were tested for amantadine resistance and all seven were found to be resistant. (Table 3)

Table 3. Antiviral resistance by influenza virus type and subtype, Canada, 2011-2012

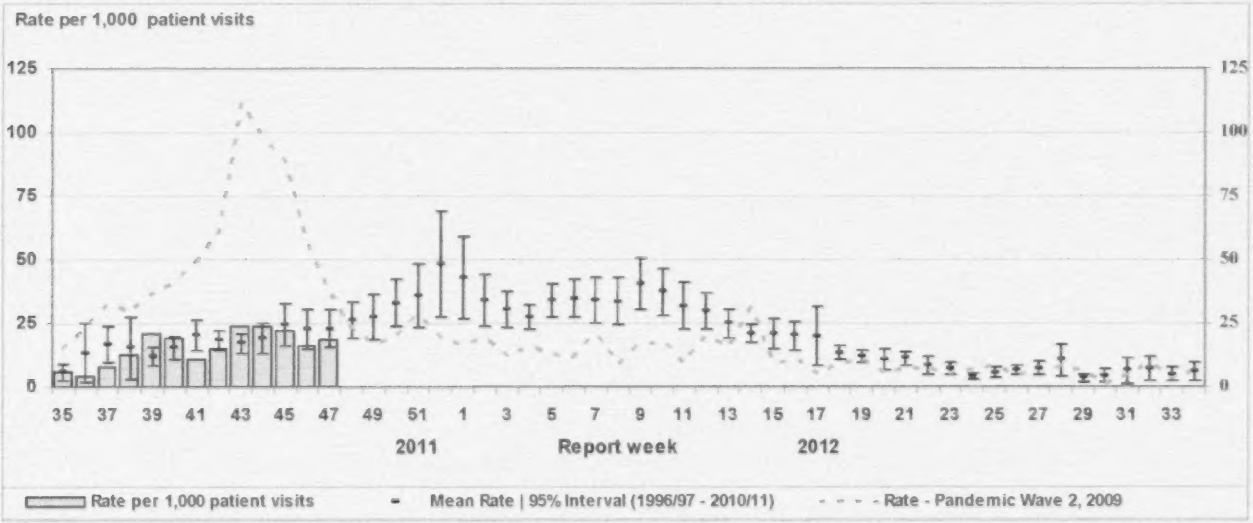
Virus type and subtype	Oseltamivir		Zanamivir		Amantadine	
	# tested	# resistant (%)	# tested	# resistant (%)	# tested	# resistant (%)
A (H3N2)	7	0 (0%)	7	0 (0%)	7	7 (100%)
A (H1N1)	0		0		0	
B	5	0 (0%)	5	0 (0%)	NA*	NA*
TOTAL	12	0 (0%)	12	0 (0%)	7	7 (100%)

* NA – not applicable

Influenza-like Illness (ILI) Consultation Rate

The national ILI consultation rate increased slightly to 18.4 consultations per 1,000 patient visits in week 47 which is within the expected levels for this time of year (Figure 7). The highest consultation rates this week were observed in children under 5 (66.8/1,000 visits) and those 5 to 19 years old (36.3/1,000).

Figure 7. Influenza-like illness (ILI) consultation rates, Canada, by report week, 2011-2012 compared to 1996/97 through to 2010/11 seasons (with pandemic data suppressed)



Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

Severe Illness Surveillance

Paediatric Influenza Hospitalizations and Deaths

No new laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network in week 47.

Five cases have been reported this season to date (from BC, AB & QC); all of which were due to influenza A. The proportion of cases by age group is as follows: 20% among infants <6 months of age; 40% were between 2-4 years; 20% were between 5-9 years; and 20% were between 10-16 years.

Adult Influenza Hospitalizations and Deaths
In week 47, two new laboratory-confirmed adult influenza hospitalizations were reported from AB and ON. Both cases were aged 65 years and over.

To date this season, 7 adult influenza hospitalizations have been reported from two provinces (AB & ON). The proportion of cases by age group is as follows: 28.6% were in those 45-64 years of age and 71.4% were in those $\geq$ 65 years.

Note: Adult influenza hospitalizations are not reported to PHAC by the following Provinces: BC, QC, & NB. Only hospitalizations that require intensive medical care are reported by SK.

International Influenza Updates

Influenza activity in the temperate regions of the northern hemisphere remains at low levels. Significant influenza activity was reported in only a few countries of the tropical zone including Nicaragua, Costa Rica, and Brazil in the Americas, Cameroon in central Africa, and Cambodia and Lao People's Democratic Republic in South East Asia. Transmission in the temperate countries of the southern hemisphere has returned to inter seasonal levels, with some persistence of influenza A(H3N2) in Australia.
World Health Organization influenza update

United States: In week 46, the CDC reported that 1.0% (22/2,276) of influenza tests were positive. Since October 1, 2011, the CDC characterized 21 influenza viruses: 1 A/H1N1,16 A/H3N2 and 4 B. The A/H1N1 virus was characterized as A/California/7/2009-like. All 16 influenza A/H3N2 viruses were A/Perth/16/2009-like. Three influenza B viruses were characterized as B/Brisbane/60/2008-like (B/Victoria lineage) and one B virus belongs to the B/Yamagata lineage. National and regional proportions of visits due to ILI were below baseline levels. Regions that reported geographic spread of influenza indicated sporadic activity at most.
Centers for Disease Control and Prevention seasonal influenza report

Europe: In week 47, levels of influenza activity in Europe remained low. Of the 42 countries reporting on geographical distribution of influenza activity, one country (the Netherlands) reported local activity and 9 countries reported sporadic spread. Out of 42 countries reporting on trends, 9 reported increasing trends. All countries reported low intensity of influenza activity and low impact on their health care services. The percentage of sentinel samples that tested positive for influenza in week 47 (0.8%) remained low, as is common for this time of year, while respiratory syncytial virus detections have slowly increased. Since week 40, 5 influenza viruses have been characterized antigenically: 2 were A/California/7/2009 (H1N1)-like; 1 was A/Perth/16/2009 (H3N2)-like; 1 was B/Florida/4/2006-like (B/Yamagata/16/88 lineage), and 1 was B/Brisbane/60/2008-like (B/Victoria/2/87 lineage).
EuroFlu weekly electronic bulletin

Human Avian Influenza Updates

Since 1 September 2011, the WHO has reported six cases of human A/H5N1 avian influenza infection. Two of the cases were from Egypt and four were from Indonesia. All six cases required hospitalization; four of the six cases died (all were from Indonesia).
WHO Avian influenza situation updates

FluWatch reports include data and information from the following sources: laboratory reports of positive influenza tests in Canada (National Microbiology Laboratory), sentinel physician reporting of influenza-like illness (ILI), provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, and outbreaks, influenza-associated paediatric and adult hospitalizations, antiviral sales in Canada, and WHO and other international reports of influenza activity.

Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU).

ILI definition for the 2011-2012 season

ILI in the general population: Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

Definitions of ILI/Influenza outbreaks for the 2011-2012 season

Schools: Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.

Hospitals and residential institutions: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case. Institutional outbreaks should be reported within 24 hours of identification. Residential institutions include but not limited to long-term care facilities (LTCF) and prisons.

Other settings: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. workplace, closed communities.

Influenza Activity Levels Definition for the 2011-2012 season

Influenza Regional Activity levels are defined as:

1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported

2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†

3 = Localized: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region**†

4 = Widespread: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring **in greater than or equal to 50% of the influenza surveillance region**†

Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.

* More than just sporadic as determined by the provincial/territorial epidemiologist.

† Influenza surveillance regions within the province or territory as defined by the provincial/territorial epidemiologist.

We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.

This report is available on the Public Health Agency website at the following address: http://www.phac-aspc.gc.ca/fluwatch/index.html. Ce rapport est disponible dans les deux langues officielles. Pour en recevoir un exemplaire dans l'autre langue chaque semaine, veuillez communiquer avec Estelle Arseneault, Division de l'immunisation et des infections respiratoires au (613) 998-8862.